

# Channel Loss (CHANLOSS) Model

## Description of Algorithm

The Channel Loss model accounts for losses or gains of water that occur along a channel reach as a result of flow through the channel bottom and evaporation from the stream surface.

## Model Parameters

CHANLOSS uses the existing NWSRFS operation definition for defining model parameters. The NWSRFS operation definition is enclosed within a single parameter element named “OPERATION\_CONTENTS”. An example is shown below. For further information see:

[http://www.nws.noaa.gov/oh/hrl/nwsrfs/users\\_manual/part5/\\_pdf/533chanloss.pdf](http://www.nws.noaa.gov/oh/hrl/nwsrfs/users_manual/part5/_pdf/533chanloss.pdf)

CATLIN-ROCKY F	VARC	0.0			
CDMC2	QINE	6			
2.80	3.80	4.20	5.20	5.20	4.20
4.20	4.20	4.20	4.20	4.80	3.80

**Note: Other xml elements may exist in the parameter file, but they are not used at this time.**

## Model States

CHANLOSS model states are defined in a property file format. An example is shown below. The model state property names are:

Property Name	Description
LAST_PE_VALUE <sup>1</sup>	The PE time series value at the end of the previous run [mm]
UNIT	Units for State Variables (always METRIC)

An example is shown below.

UNIT=METRIC  
LAST\_PE\_VALUE=5.40414

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<sup>1</sup> Only used when CHANLOSS uses a PE input time series.

## Model Time Series

CHANLOSS requires minimum 1 input time series, a maximum of 2 input time series, and 1 output time series.

Time Series Type	Internal Model Units	Time Step	Input or Output	Missing Values Allowed	Required [Yes or No]
Instantaneous Discharge	CMS	any	Input and Output	No	Yes
Potential ET (MAPE)	MM	24	Input	No	No

### 1. Notes about configuring Model in FEWS workflow

The variable loss algorithm uses local standard time to compute the fraction of 24 hour MAPE to use, so run info xml file should be configured to use a local time zone code (e.g. -6.0 for CST).

Examples:

Module Configuration File

[ModuleConfigFiles\CHANLOSS\\_DLWO2P\\_DLWO2P\\_Forecast.xml](#)

Module Parameter File

[ModuleParFiles\CHANLOSS\\_DLWO2P\\_DLWO2P\\_UpdateStates.xml](#)

## FEWS Adapter Used

The Channel Loss model uses the OHDFewsadapter to communicate.

Information about this adapter can be found at [OHDFewsadapter](#).